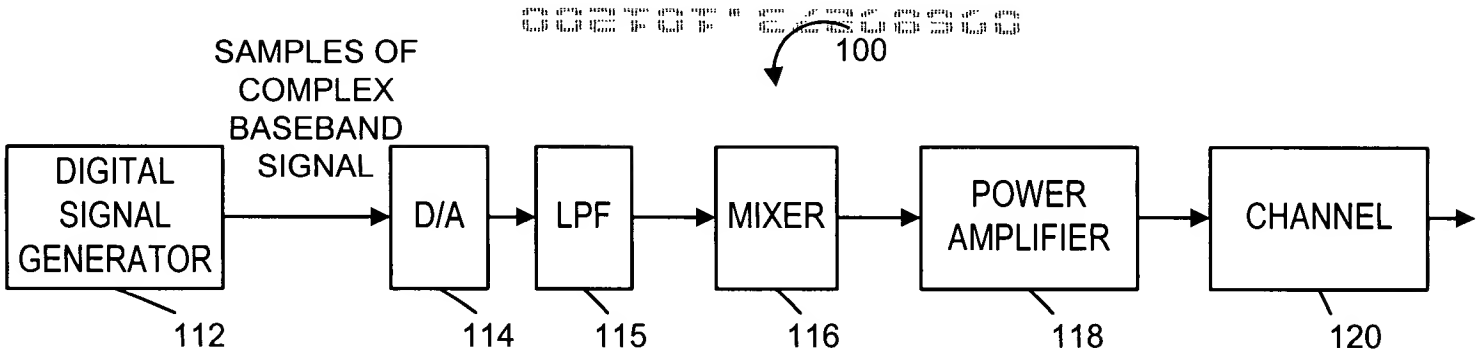

Fig. 1 PRIOR ART

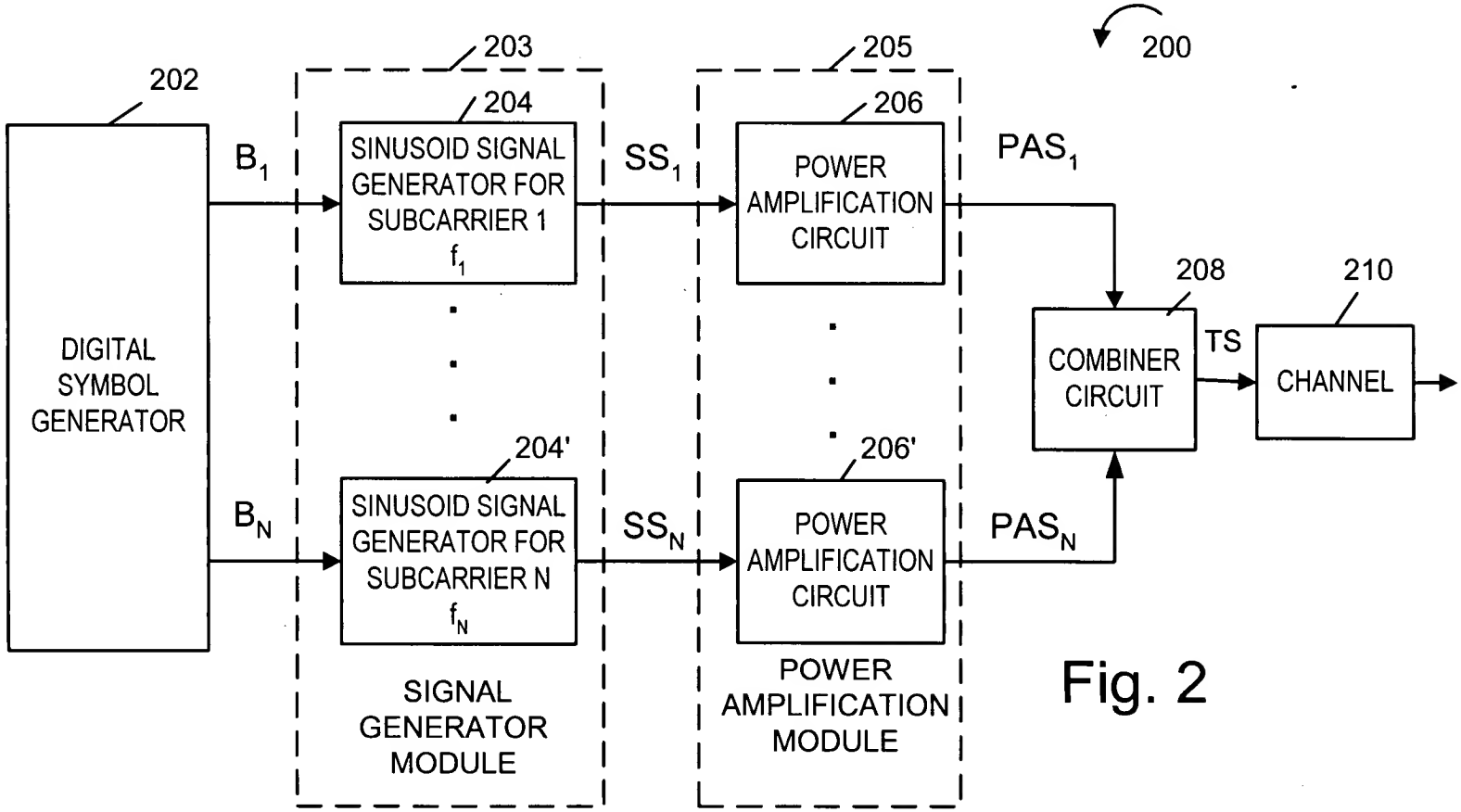

Fig. 2

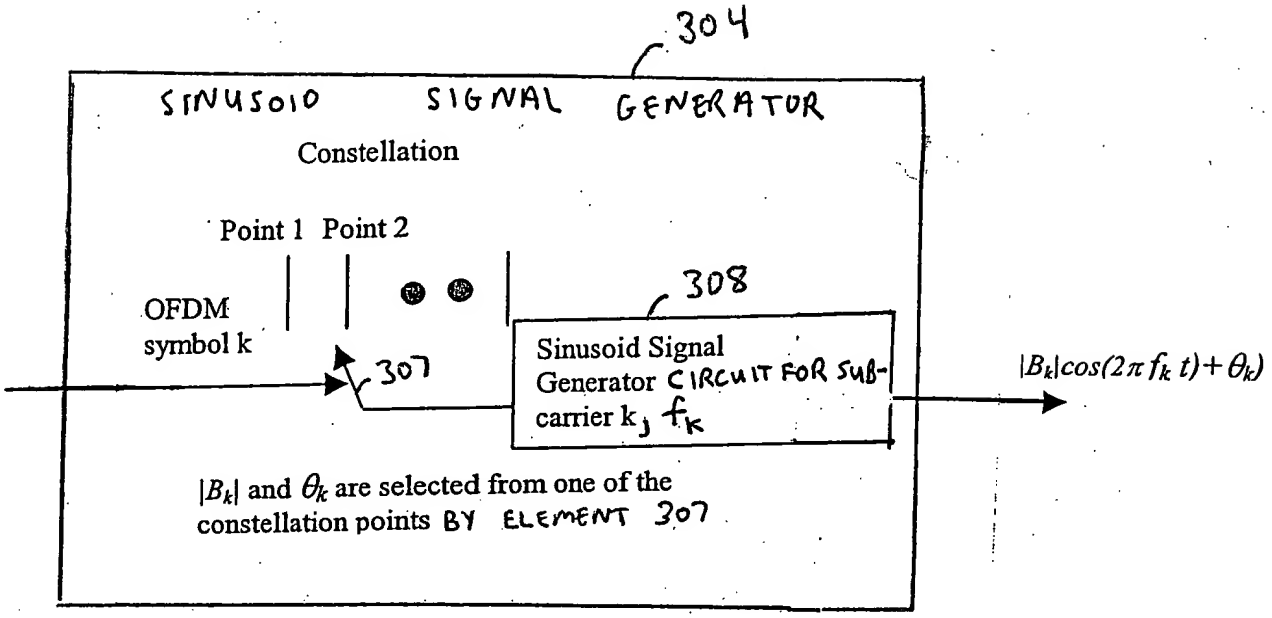
304
SINUSOID SIGNAL GENERATOR
Constellation
Point 1 Point 2
OFDM symbol k
307
308
Sinusoid Signal Generator CIRCUIT FOR SUB-carrier k, f_K
$|B_k|\cos(2\pi f_k t)+\theta_k)$
$|B_k|$ and θ_k are selected from one of the constellation points BY ELEMENT 307

Fig. 3A

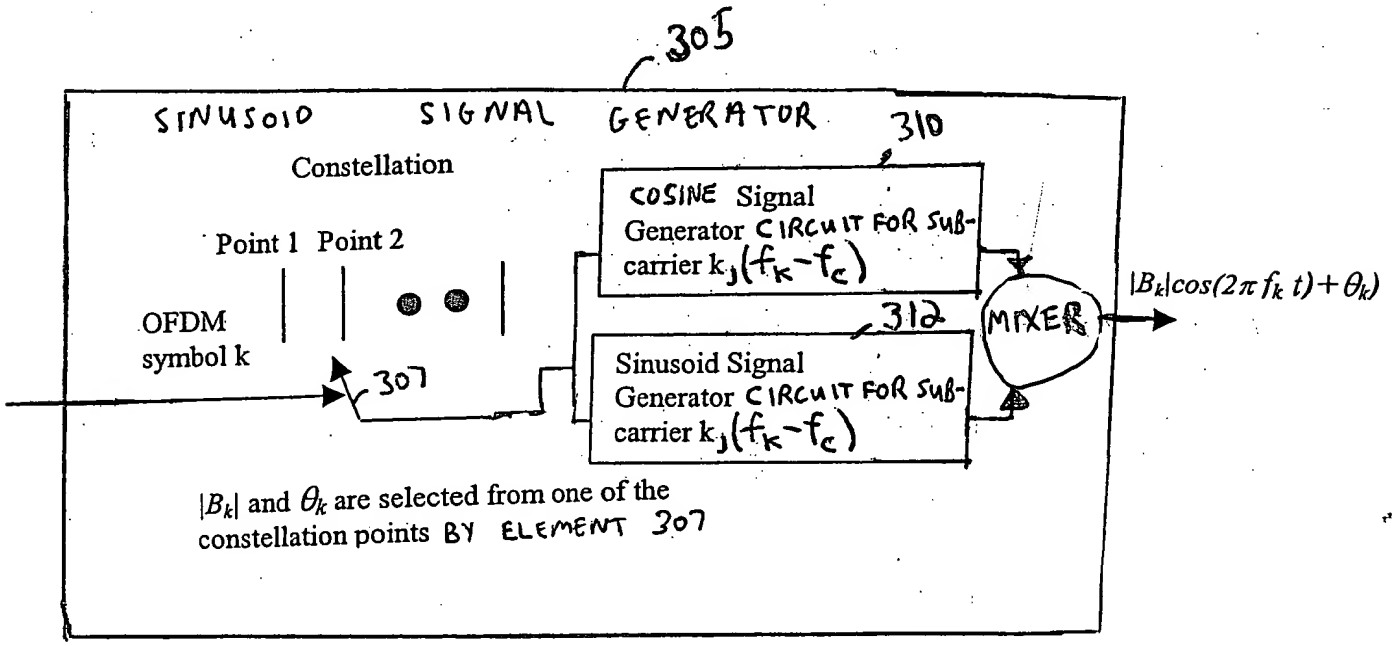
305
SINUSOID SIGNAL GENERATOR
Constellation
Point 1 Point 2
OFDM symbol k
307
310
COSINE Signal Generator CIRCUIT FOR SUB-carrier $k_j(f_K-f_c)$
312
Sinusoid Signal Generator CIRCUIT FOR SUB-carrier $k_j(f_K-f_c)$
MIXER
$|B_k|\cos(2\pi f_k t)+\theta_k)$
$|B_k|$ and θ_k are selected from one of the constellation points BY ELEMENT 307

Fig. 3B

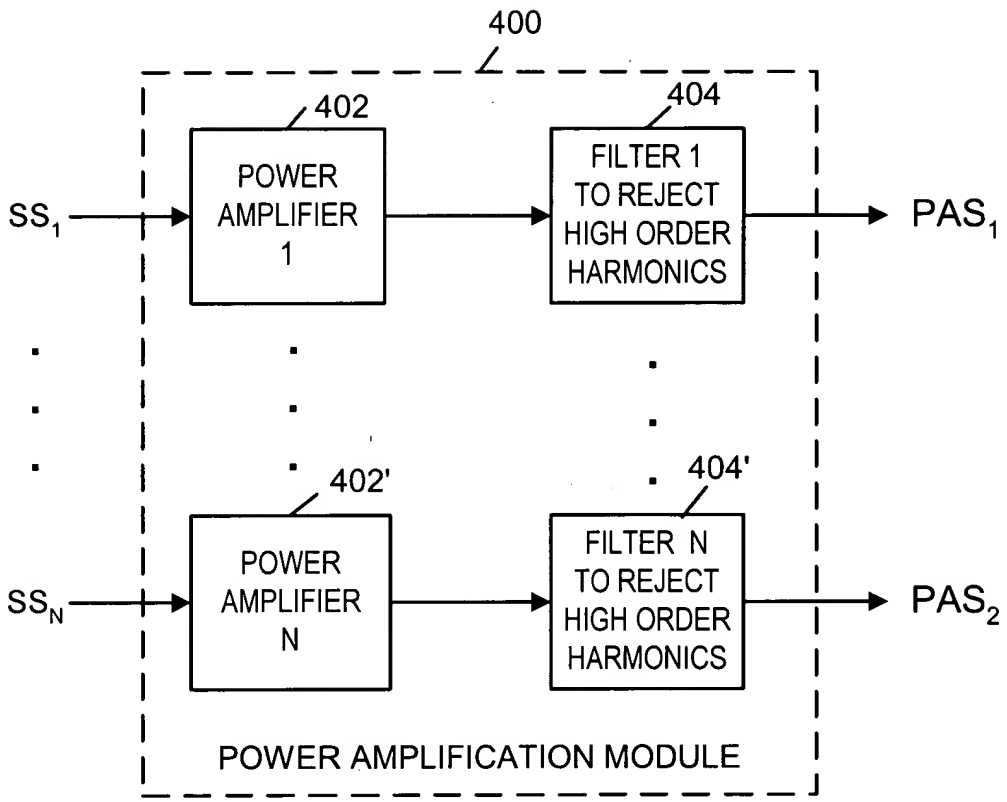
400
402
404
POWER AMPLIFIER 1
FILTER 1 TO REJECT HIGH ORDER HARMONICS
SS1
PAS1
402'
404'
POWER AMPLIFIER N
FILTER N TO REJECT HIGH ORDER HARMONICS
SSN
PAS2
POWER AMPLIFICATION MODULE

Fig. 4

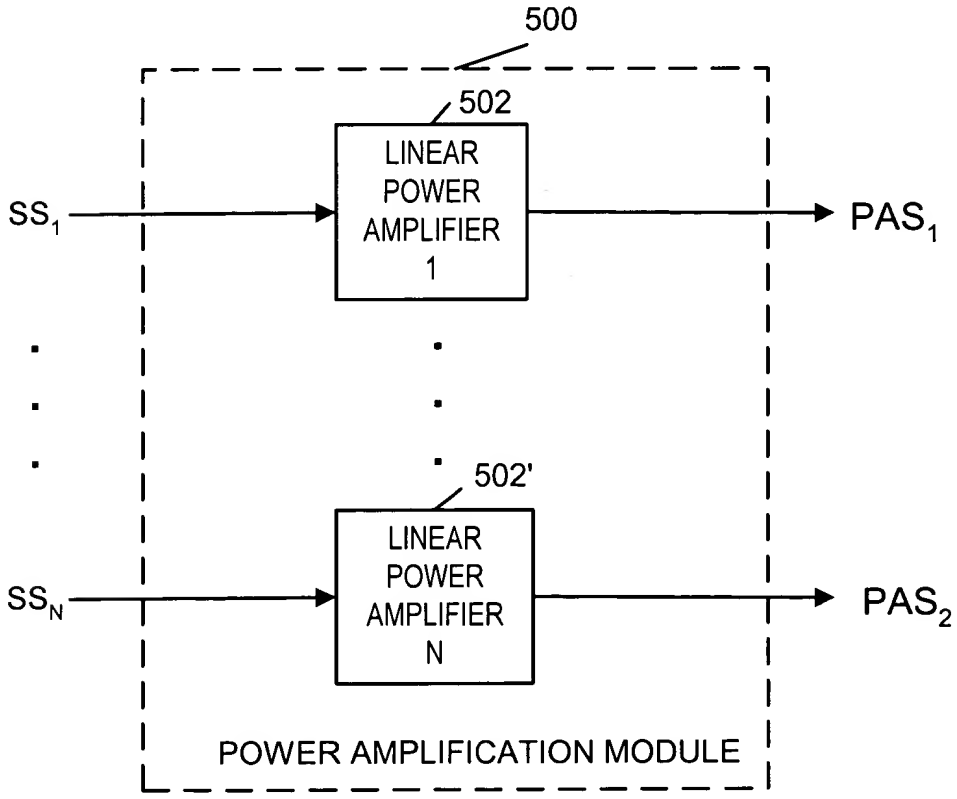
500
502
LINEAR POWER AMPLIFIER 1
SS1
PAS1
502'
LINEAR POWER AMPLIFIER N
SSN
PAS2
POWER AMPLIFICATION MODULE

Fig. 5

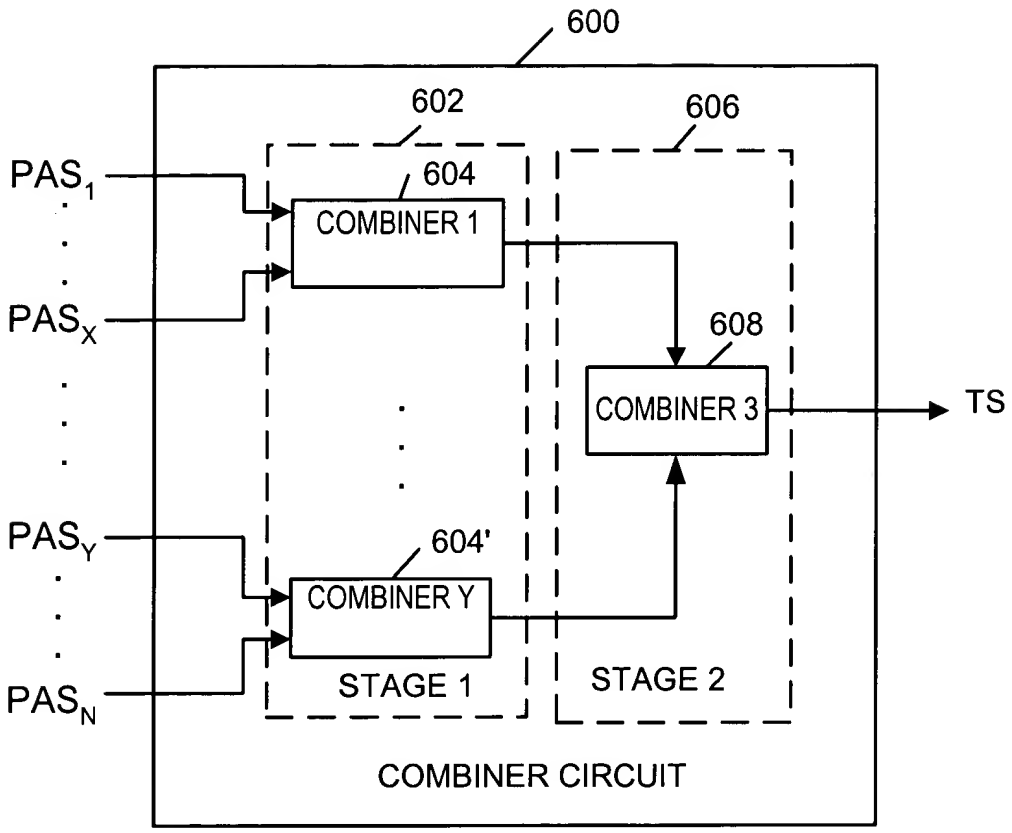
600
602
606
PAS1
604
COMBINER 1
PASX
608
COMBINER 3
TS
PASY
604'
COMBINER Y
PASN
STAGE 1
STAGE 2
COMBINER CIRCUIT

Fig. 6

09657307-220606

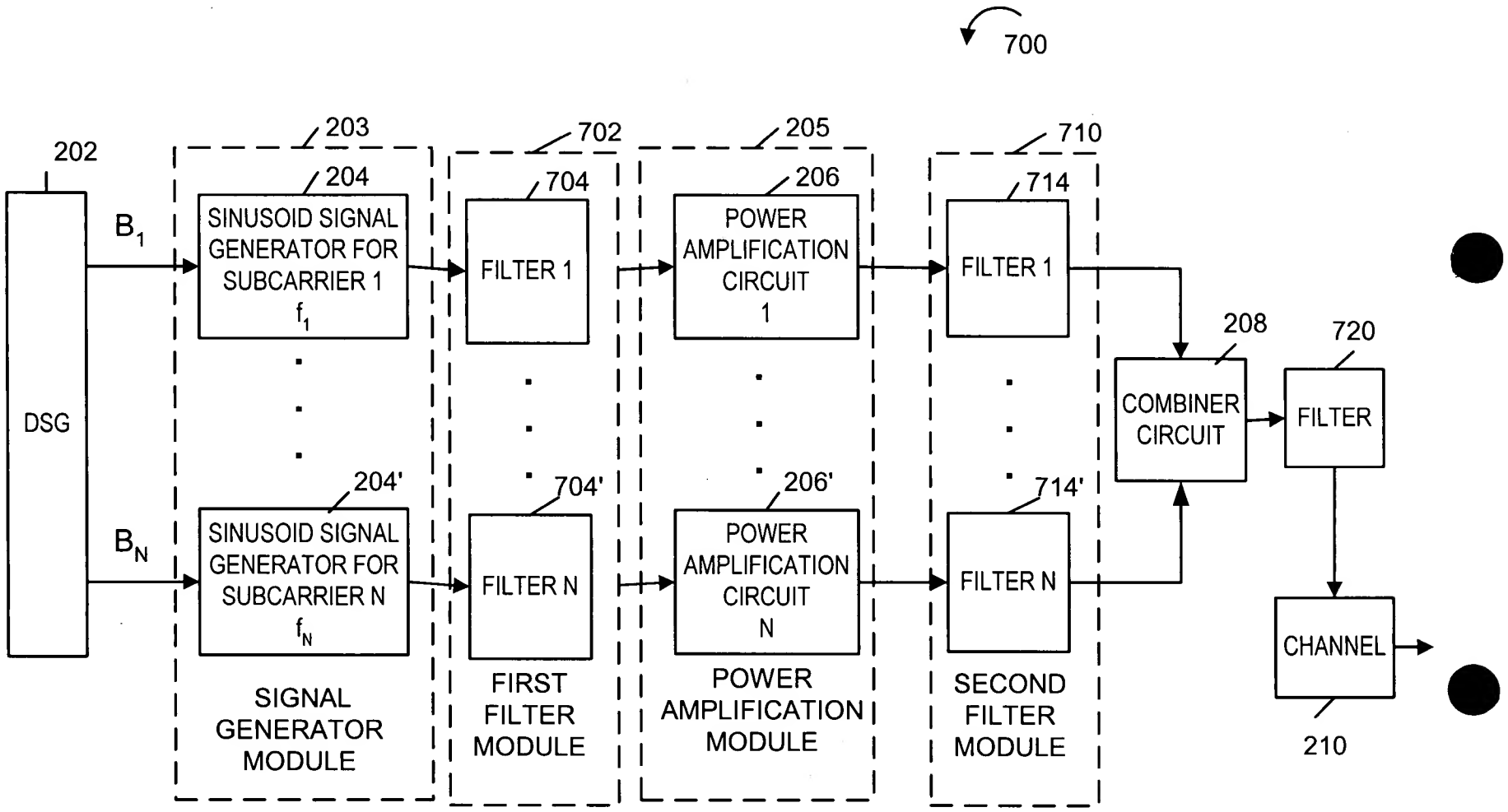

Fig. 7

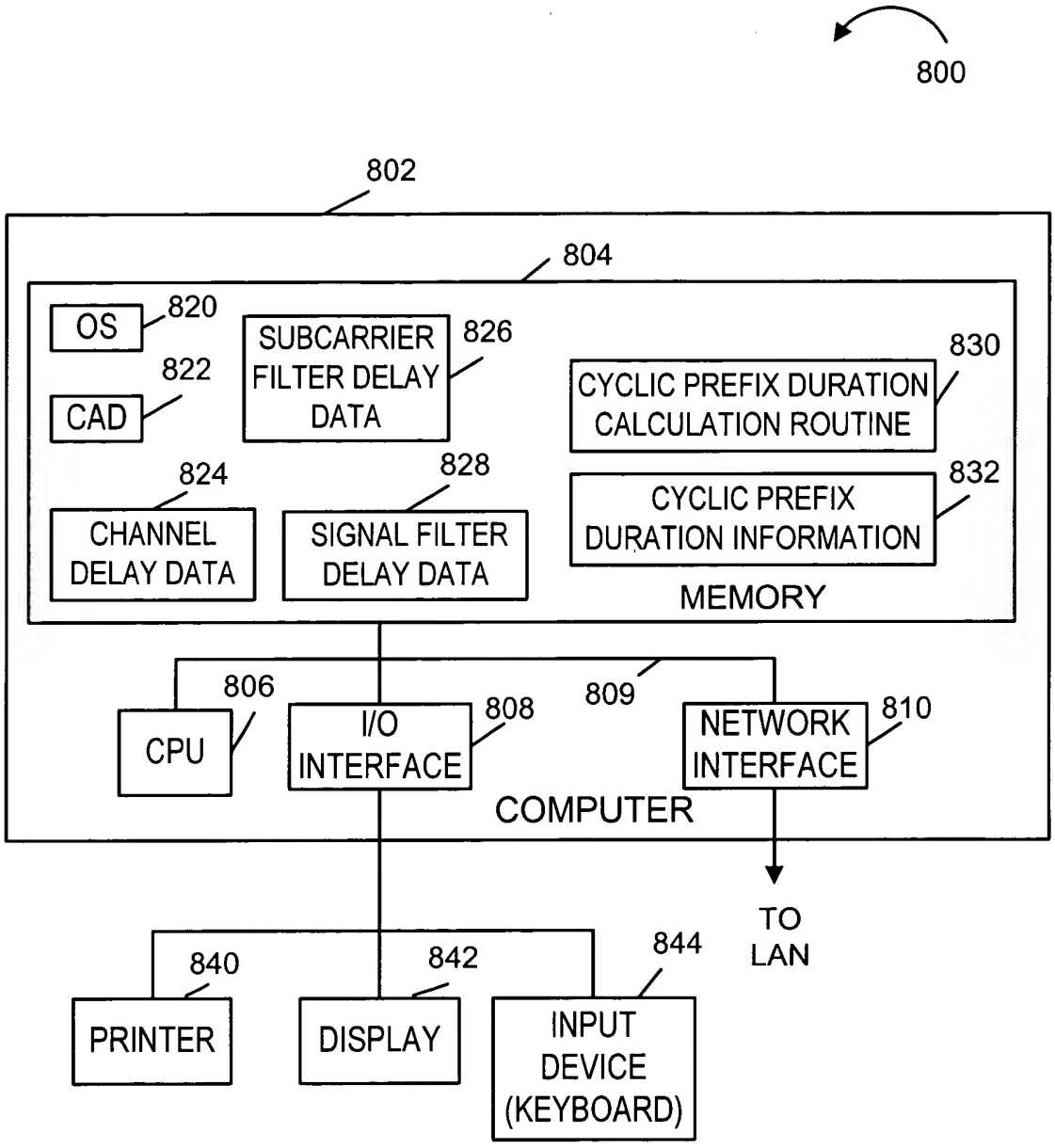
800
802
804
OS
820
CAD
822
SUBCARRIER FILTER DELAY DATA
826
CYCLIC PREFIX DURATION CALCULATION ROUTINE
830
CHANNEL DELAY DATA
824
SIGNAL FILTER DELAY DATA
828
CYCLIC PREFIX DURATION INFORMATION
832
MEMORY
CPU
806
I/O INTERFACE
808
809
NETWORK INTERFACE
810
COMPUTER
TO LAN
PRINTER
840
DISPLAY
842
INPUT DEVICE (KEYBOARD)
844

Fig. 8

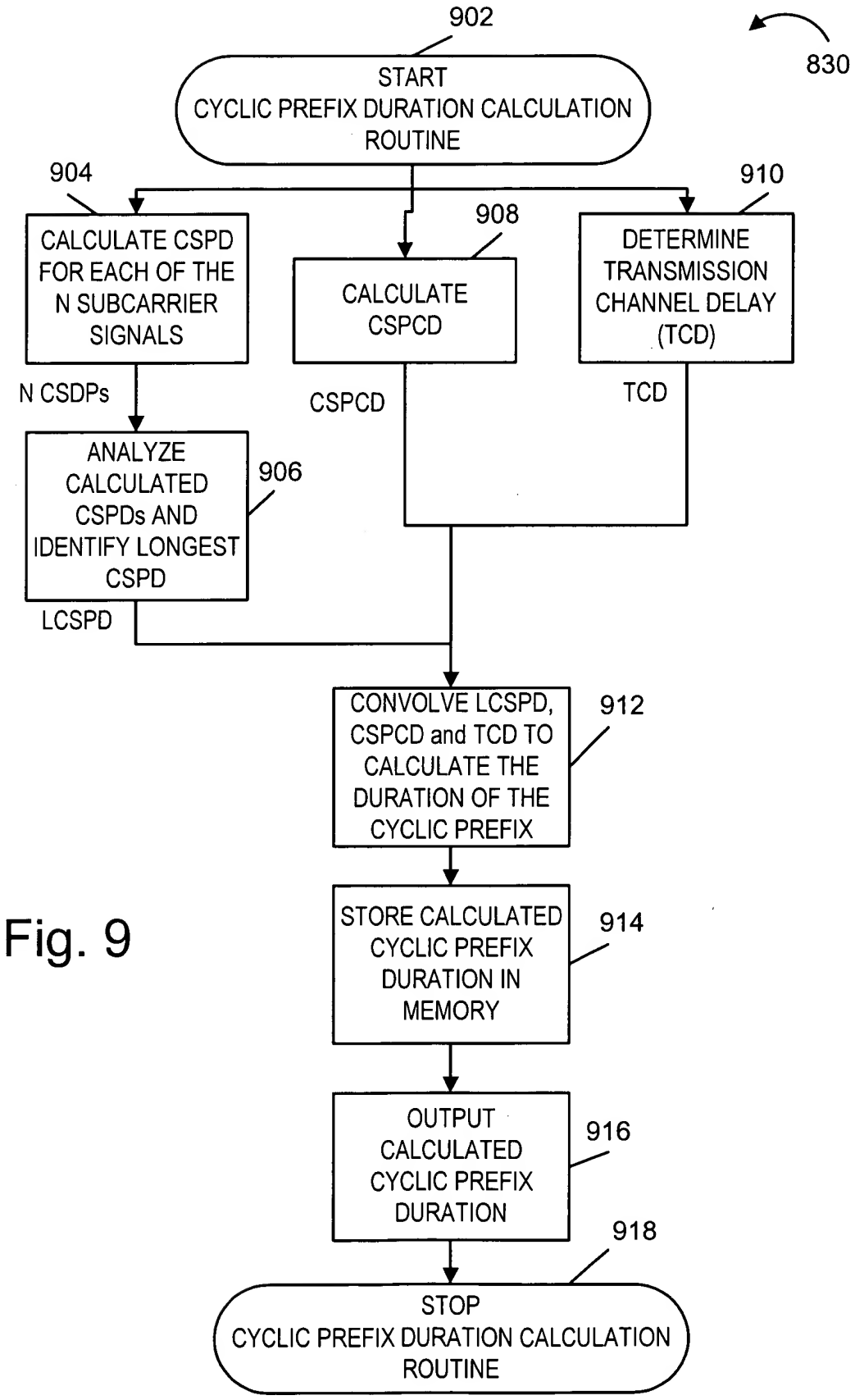
902
830
START
CYCLIC PREFIX DURATION CALCULATION
ROUTINE
904
910
908
CALCULATE CSPD
FOR EACH OF THE
N SUBCARRIER
SIGNALS
CALCULATE
CSPCD
DETERMINE
TRANSMISSION
CHANNEL DELAY
(TCD)
N CSDPs
CSPCD
TCD
ANALYZE
CALCULATED
CSPDs AND
IDENTIFY LONGEST
CSPD
906
LCSPD
CONVOLVE LCSPD,
CSPCD and TCD TO
CALCULATE THE
DURATION OF THE
CYCLIC PREFIX
912
STORE CALCULATED
CYCLIC PREFIX
DURATION IN
MEMORY
914
OUTPUT
CALCULATED
CYCLIC PREFIX
DURATION
916
918
STOP
CYCLIC PREFIX DURATION CALCULATION
ROUTINE

Fig. 9

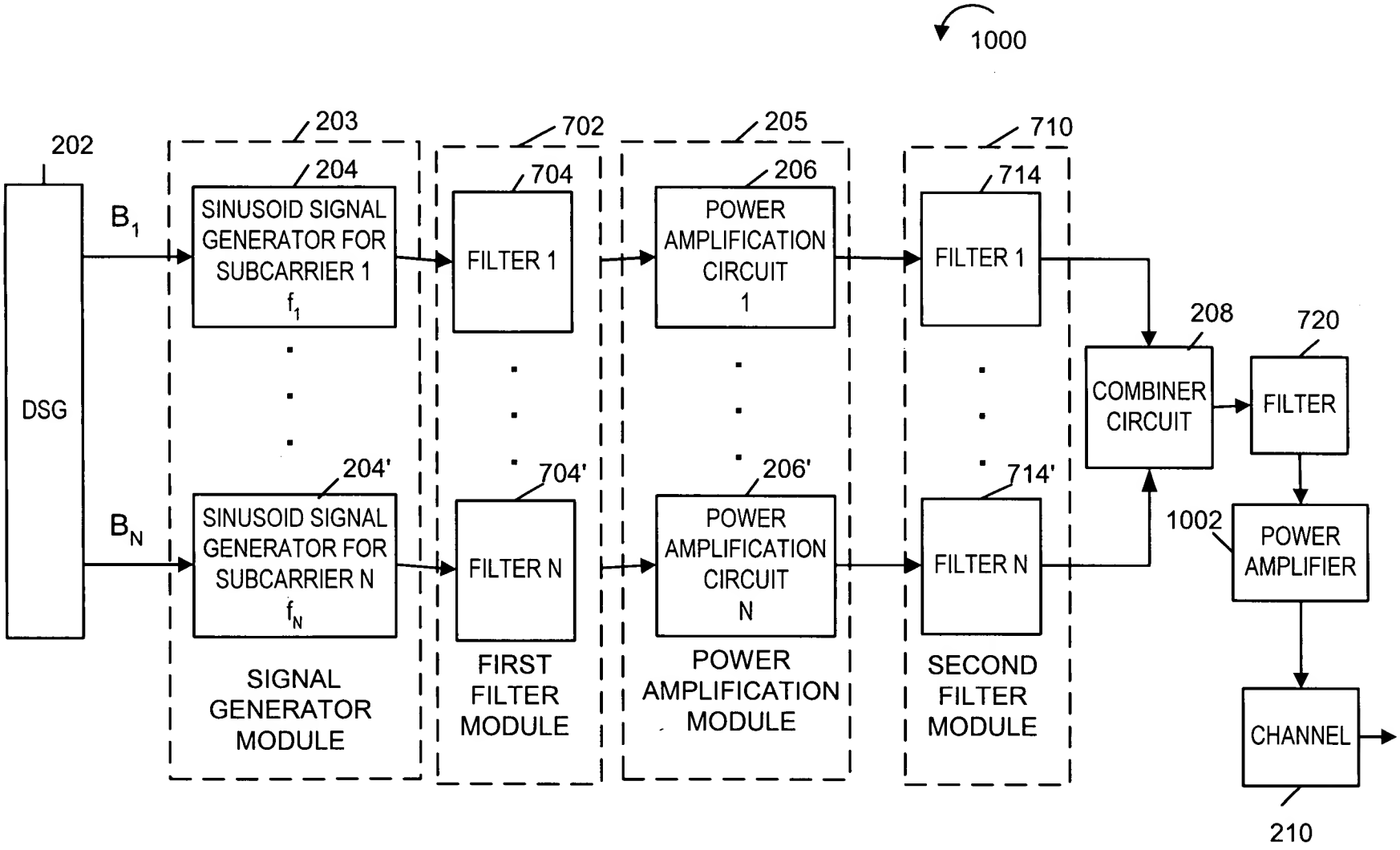
1000
202
DSG
203
204
SINUSOID SIGNAL GENERATOR FOR SUBCARRIER 1
f_1
B_1
204'
SINUSOID SIGNAL GENERATOR FOR SUBCARRIER N
f_N
B_N
SIGNAL GENERATOR MODULE
702
704
FILTER 1
704'
FILTER N
FIRST FILTER MODULE
205
206
POWER AMPLIFICATION CIRCUIT 1
206'
POWER AMPLIFICATION CIRCUIT N
POWER AMPLIFICATION MODULE
710
714
FILTER 1
714'
FILTER N
SECOND FILTER MODULE
208
COMBINER CIRCUIT
720
FILTER
1002
POWER AMPLIFIER
CHANNEL
210

Fig. 10

0027937 2020202

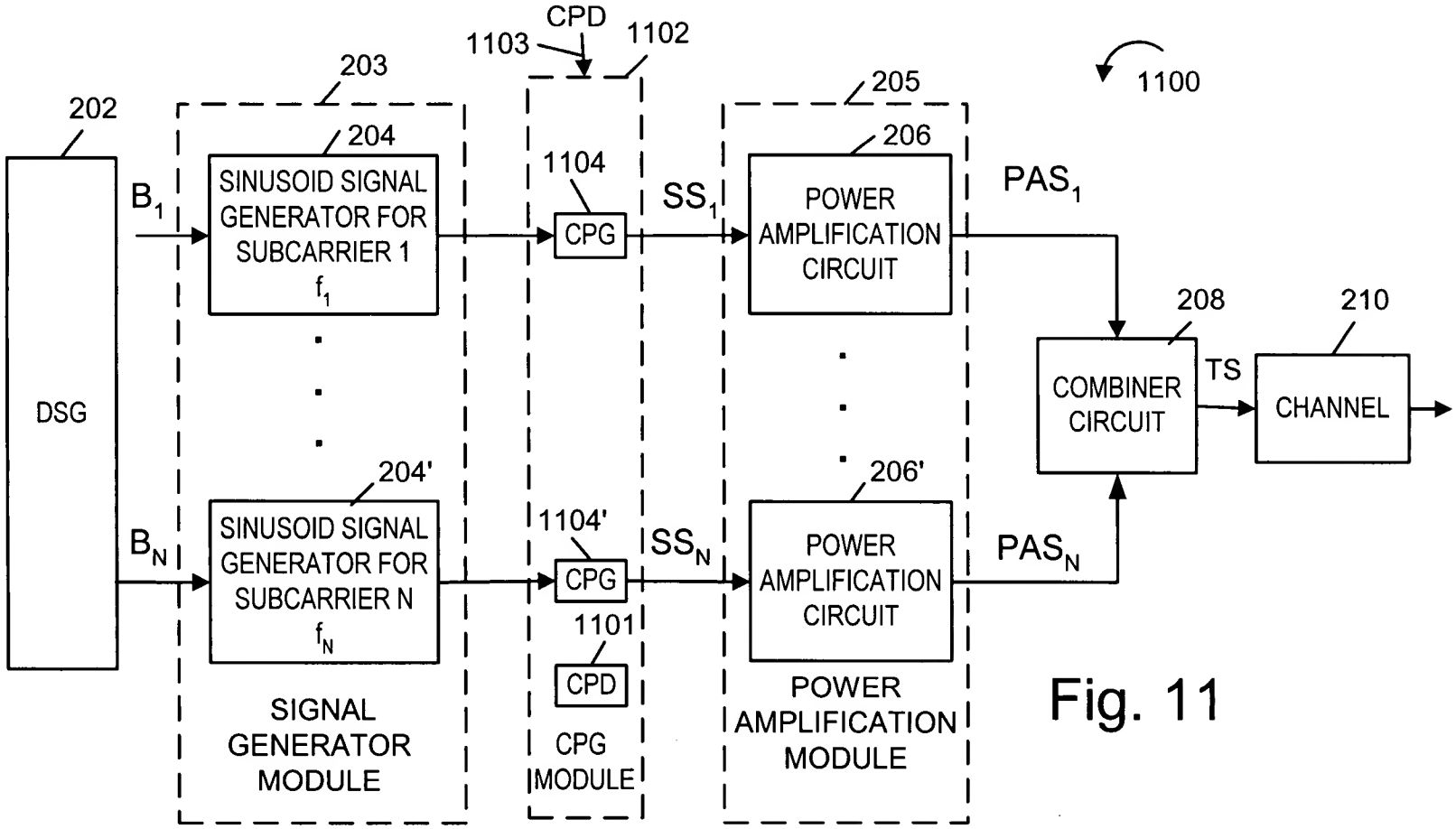

Fig. 11